

WHAT IS CLAIMED IS:

1. An electronic watermark inserter for inserting an electronic watermark pattern or patterns for identifying a furnisher of a picture or image, termed "picture" collectively, into data of said picture, said inserter comprising:
  - 5 an electronic watermark pattern inserter for inserting previously generated key information pattern or patterns into a picture or pictures into which said electronic watermark pattern or patterns have been inserted and for transmitting the resulting picture or pictures.
  2. The electronic watermark inserter as defined in claim 1 wherein said key information patterns are arranged at preset intervals, and wherein, when inserted, said key information patterns are shifted in respective random directions.
  3. The electronic watermark inserter as defined in claim 1 further comprising:

picture analysis means for analysing an input picture for determining the insertion strength of said electronic watermark pattern into each pixel of said picture;

5 said electronic watermark pattern or patterns and said key information patterns being inserted in accordance with said insertion strength information.
  4. The electronic watermark inserter as defined in claim 2 further comprising:

picture analysis means for analysing an input picture for

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determining the insertion strength of said electronic watermark pattern into each pixel of said picture;

said electronic watermark pattern or patterns and said key information patterns being inserted in accordance with said insertion strength information.

5. An electronic watermark detector for detecting an electronic watermark pattern or patterns for specifying a furnisher for a picture or image, termed "picture" collectively, inserted into data of said picture, comprising:

5 means for detecting a key information pattern or patterns inserted into said data of the picture along with an electronic watermark pattern or patterns;

means for generating parameters required for detecting the electronic watermark pattern or patterns from the key information as detected; and

means for detecting said electronic watermark pattern or patterns from said picture based on the parameters generated in said parameter generating means.

6. The electronic watermark detector as defined in claim 5 wherein the key information patterns comprise patterns that are arranged at a preset interval at the outset and that, when inserted, are shifted each in a random direction.

7. An electronic watermark system comprising;

an electronic watermark inserter for inserting an electronic watermark pattern or patterns for identifying a

- furnisher of a picture or image, termed "picture" collectively,  
5 into data of said picture, said inserter comprising:  
an electronic watermark pattern inserter for inserting  
previously generated key information pattern or patterns into a  
picture or pictures into which said electronic watermark pattern  
or patterns have been inserted and for transmitting the  
10 resulting picture or pictures, and  
an electronic watermark detector for detecting an  
electronic watermark pattern or patterns for specifying a  
furnisher for a picture or image, termed "picture" collectively,  
inserted into data of said picture, comprising:  
15 means for detecting a key information pattern or patterns  
inserted into said data of the picture along with an electronic  
watermark pattern or patterns;  
means for generating parameters required for detecting the  
electronic watermark pattern or patterns from the key  
20 information as detected; and  
means for detecting said electronic watermark pattern or  
patterns from said picture based on the parameters generated in  
said parameter generating means.
8. A method for inserting an electronic watermark pattern or  
patterns for identifying a furnisher of a picture or image,  
termed "picture" collectively, into data of said picture, said  
method comprising the steps of:  
5 (a) providing a key information pattern or patterns,

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(b) inserting the previously provided key information pattern or patterns into a picture or pictures, into which an electronic watermark pattern or patterns have been inserted, and  
(c) transmitting the resulting picture or pictures.

9. The method as defined in claim 8 wherein said key information patterns are arranged at present intervals, and wherein, when inserted, said key information patterns are shifted in random directions, respectively.

10. The method as defined in claim 8 further comprising:

a step of analysing an input picture or pictures for determining the insertion strength of said electronic watermark pattern or patterns per each pixel or section of said picture or  
5 pictures;

a step of inserting said electronic watermark pattern or patterns and said key information pattern or patterns in accordance with said insertion strength information.

11. The method as defined in claim 7 further comprising:

a step of analysing an input picture or pictures for determining the insertion strength of said electronic watermark pattern or patterns per each pixel or section of said picture or  
5 pictures;

a step of inserting said electronic watermark pattern or patterns and said key information pattern or patterns in accordance with said insertion strength information.

12. A method for detecting an electronic watermark pattern for

PUBLISHED IN ACCORDANCE WITH PCT RULE 13.2

specifying a furnisher for a picture or image, termed "picture" collectively, inserted into data of said picture, comprising the steps of:

- 5           (a) detecting key information pattern or patterns inserted into said data of the picture or pictures along with said electronic watermark pattern or patterns;
- (b) generating parameters required for detecting the electronic watermark pattern or patterns from the key  
10 information pattern or patterns as detected; and
- (c) detecting said electronic watermark pattern or patterns from said picture or pictures based on the parameters generated.

13. The method as defined in claim 12 wherein said key information patterns comprise patterns that are arranged at a present interval at the outset and that, when inserted, are shifted in a random direction, respectively.

14. An electronic watermark inserter for inserting an electronic watermark pattern or patterns for identifying a furnisher of a picture into data of said picture, said inserter comprising:

- 5           (a) an electronic watermark pattern inserter for inserting previously generated key information pattern into a picture or pictures into which said electronic watermark pattern has been inserted and for transmitting the resulting picture or pictures;
- (b) means for providing said key information pattern in a

10 predetermined specific arrangement of patterns, and  
(c) means for shifting, upon insertion, said patterns in  
random directions, pattern by pattern.

15. The electronic watermark inserter as defined in claim 14 further comprising:

a picture analysis unit analysing an input picture for determining the insertion strength of said electronic watermark

5 pattern into each pixel of said picture;

said electronic watermark pattern and said key information pattern being inserted in accordance with said insertion strength information.

16. An electronic watermark detector for detecting an electronic watermark pattern for specifying a furnisher for a picture inserted into data of said picture, comprising:

(a) a key information pattern detecting unit detecting a  
5 key information pattern inserted into said data of the picture  
along with an electronic watermark pattern;

(b) a parameter generator generating parameters required for detecting the electronic watermark pattern from the key information as detected;

10 (c) a watermark pattern detector detecting said electronic watermark pattern from said picture based on the parameters generated in said parameter generator.

17. The electronic watermark detector as defined in claim 16  
wherein the key information pattern comprises patterns that are

arranged at a present interval at the outset and that, when inserted, are shifted each in a random direction.

18. A method for inserting an electronic watermark pattern or patterns for identifying a furnisher of a picture or image, termed "picture" collectively, into data of said picture, said method comprising the steps of:

- 5       (a) providing a key information pattern or patterns;
  - (b) inserting the previously provided key information pattern or patterns into a picture or pictures, into which an electronic watermark pattern or patterns have been inserted;
  - (c) transmitting the resulting picture or pictures;
- 10       wherein said key information patterns are arranged at present intervals, and wherein, when inserted, said key information patterns are shifted in random directions, pattern by pattern.

19. The method as defined in claim 18 further comprising:

      a step of analysing an input picture or pictures for determining the insertion strength of said electronic watermark pattern or patterns per each pixel or section of said picture or  
5       pictures;

      a step of inserting said electronic watermark pattern or patterns and said key information pattern or patterns in accordance with said insertion strength information.

20. A method for detecting an electronic watermark pattern for specifying a furnisher for a picture inserted into data of said

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picture, comprising the steps of:

- (a) detecting key information pattern or patterns inserted into said data of the picture or pictures along with said electronic watermark pattern or patterns;
- (b) generating parameters required for detecting the electronic watermark pattern from the key information pattern as detected; and
- 10 (c) detecting said electronic watermark pattern from said picture based on the parameters generated,

wherein said key information pattern comprises patterns that are arranged at a present interval at the outset and that, when inserted, are shifted in a random direction, pattern by 15 pattern.